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(71) Applicant(s)

Michael Victor Rodrigues
19-21-23 Fosse Way, Ealing, LONDON, W13 0BZ,
United Kingdom

(72) Inventor(s)

Michael Victor Rodrigues

(74) Agent and/or Address for Service

Michael Victor Rodrigues
19-21-23 Fosse Way, Ealing, LONDON, W13 0BZ,
United Kingdom

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(58) Field of Search

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INT CL⁶ H04M

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(54) Abstract Title

Internet telephone

(57) A Dedicated Automatic Internet Telephone - (DAIT) - apparatus comprising telephone handset enclosure 1, containing microphone, 3, earphone, 4, speaker, 5, duplex sound card, solid state computer with LCD touch interface colour monitor, 11, duplex modem, telephone connector cable, 7, and plug, 8, said computer hardware and software preloaded with Internet (Voice) Phone (and Multimedia Communication) Application software/protocols, prepaid, precensored, preregistered for Internet Voice Service, and configured for instant self booting up, self dialling-up Internet On-Line Service Provider, self entering of security code and logging-on Internet (Voice) Phone Service Provider, ready for Voice Phone calls on the Internet as soon as apparatus is switched on.

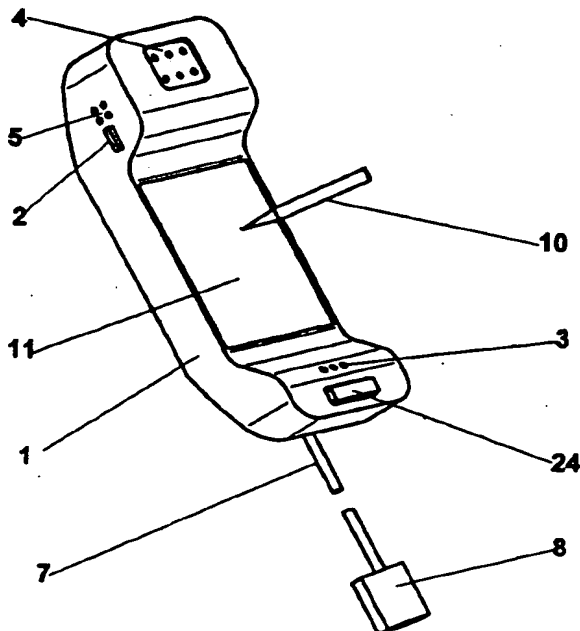


Fig 1

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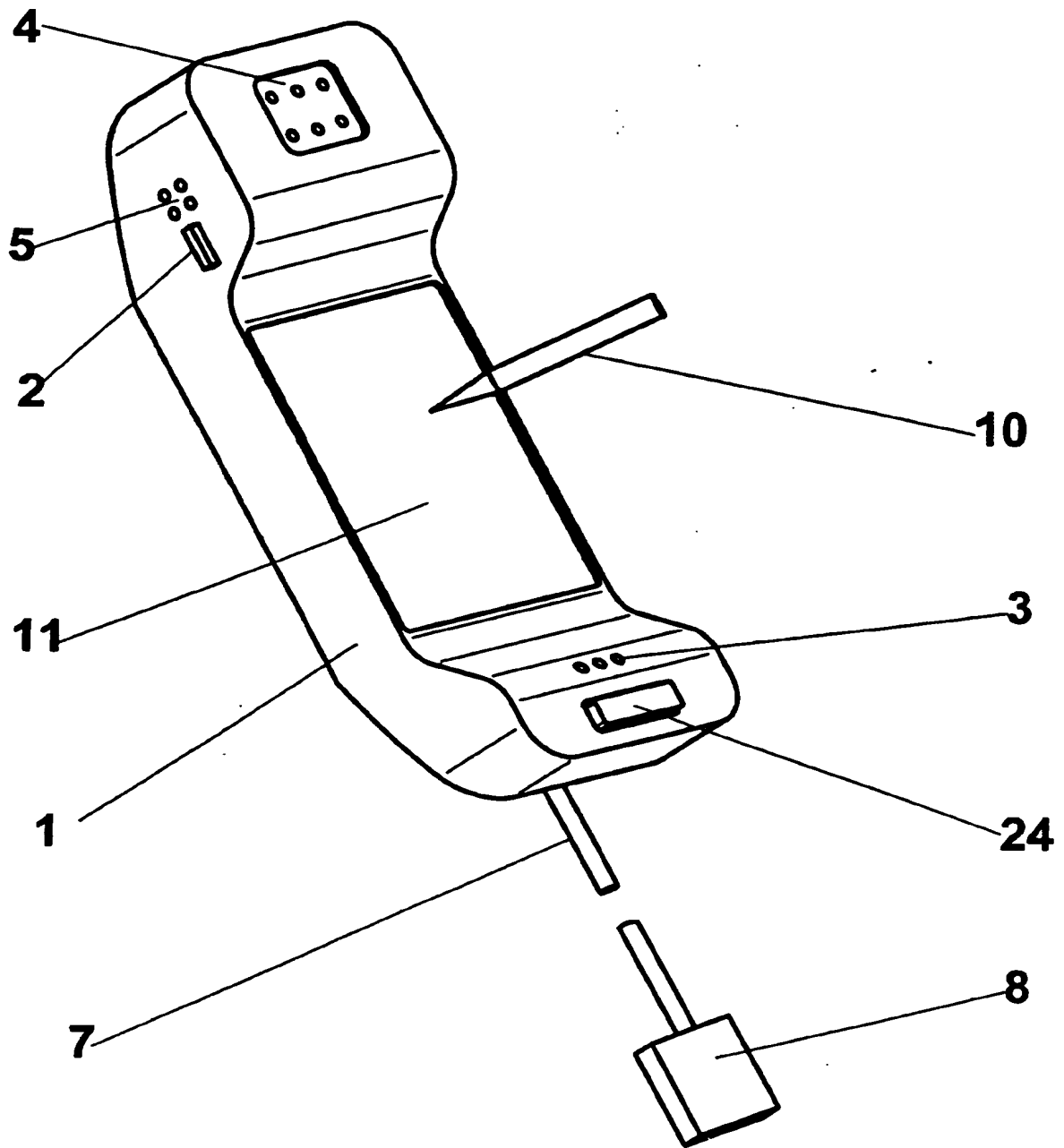
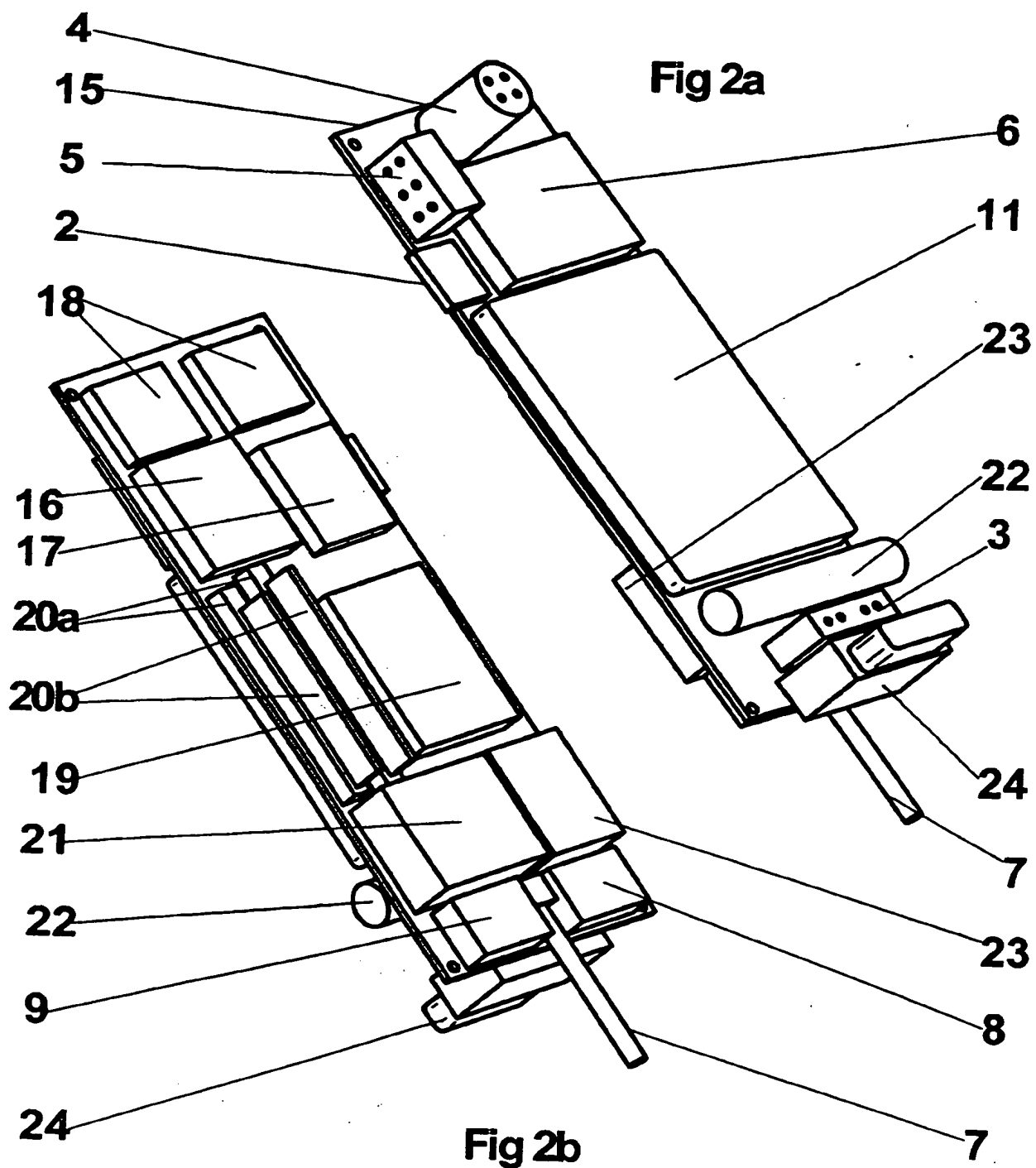


Fig 1



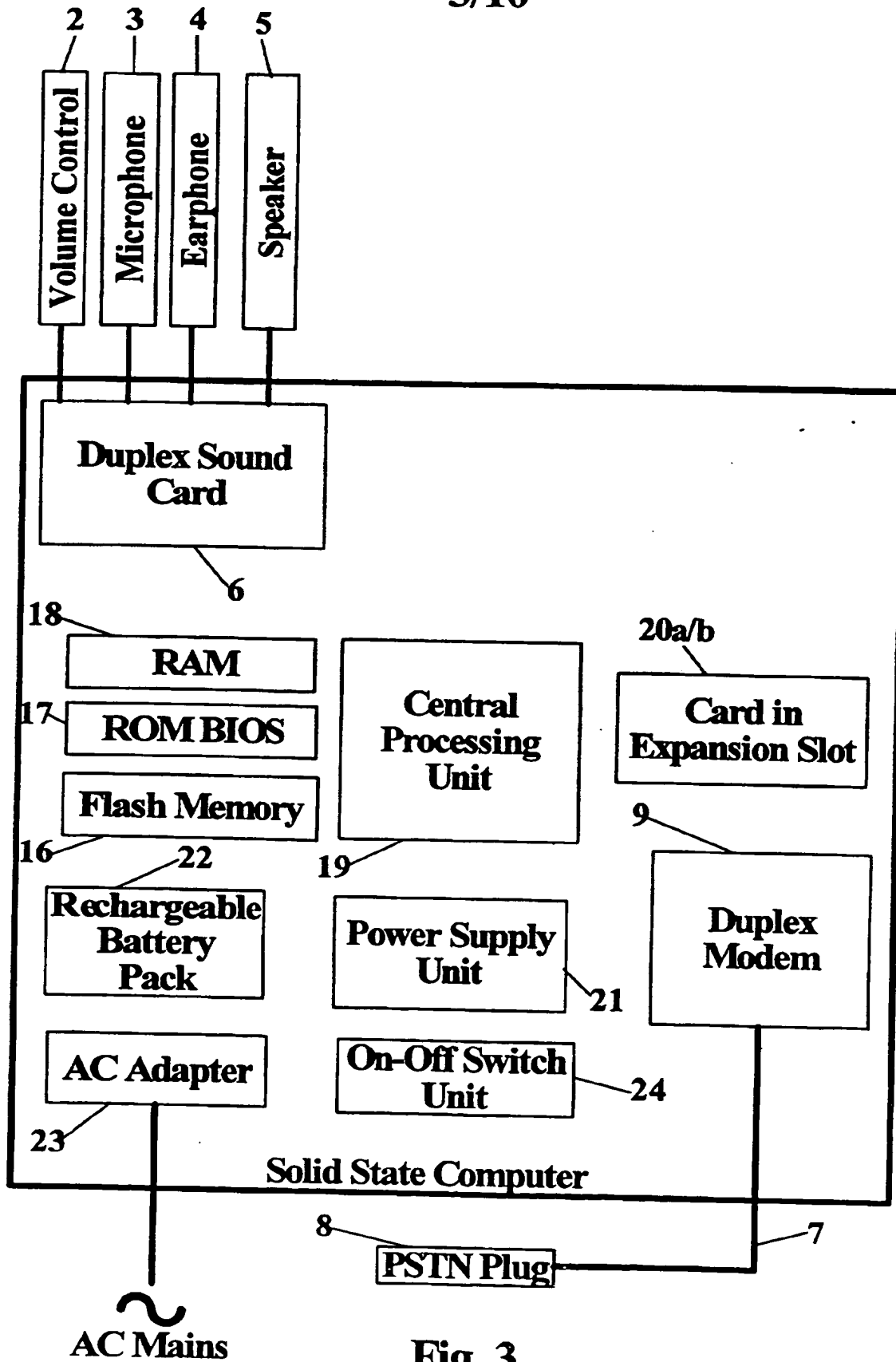
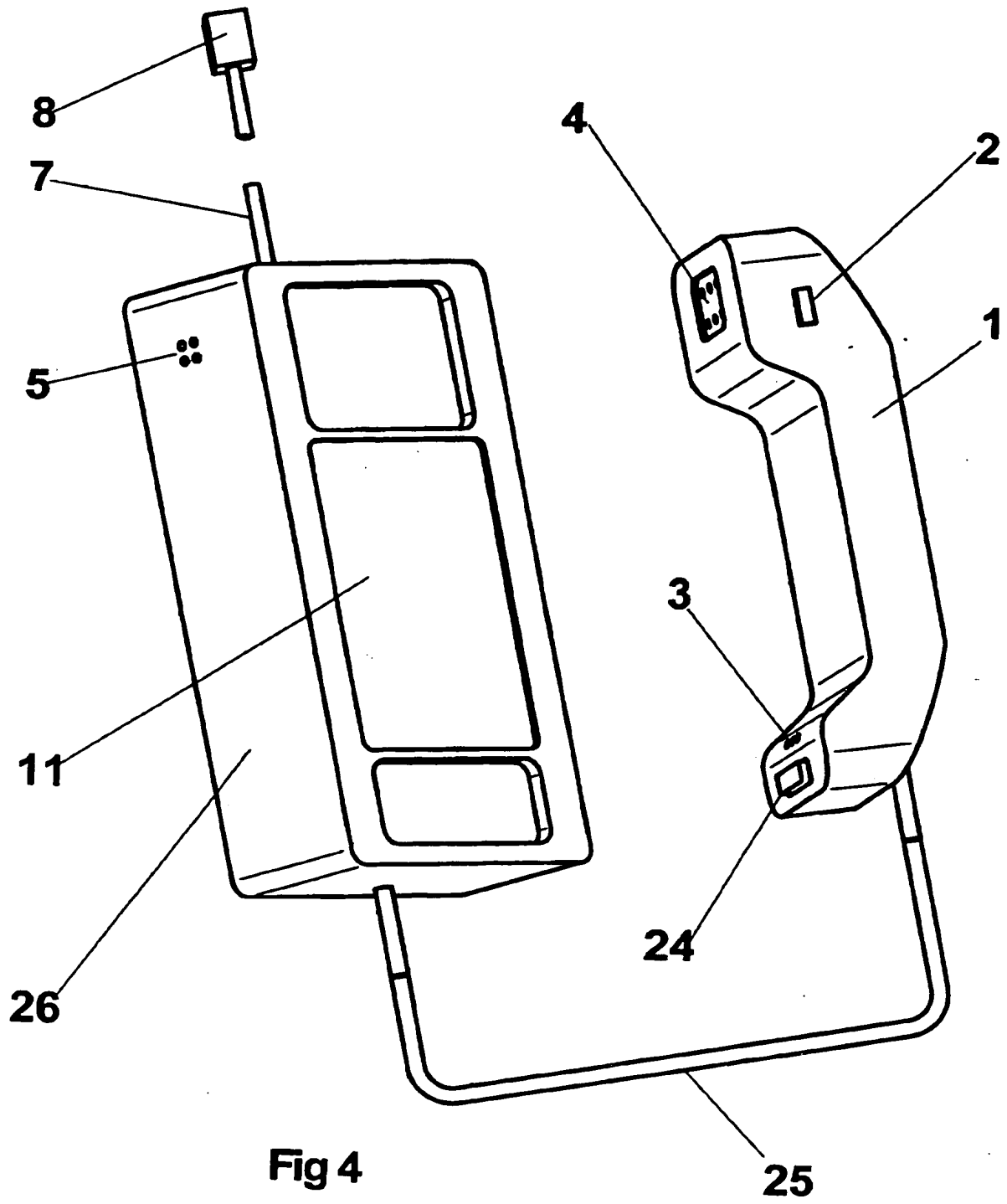


Fig. 3



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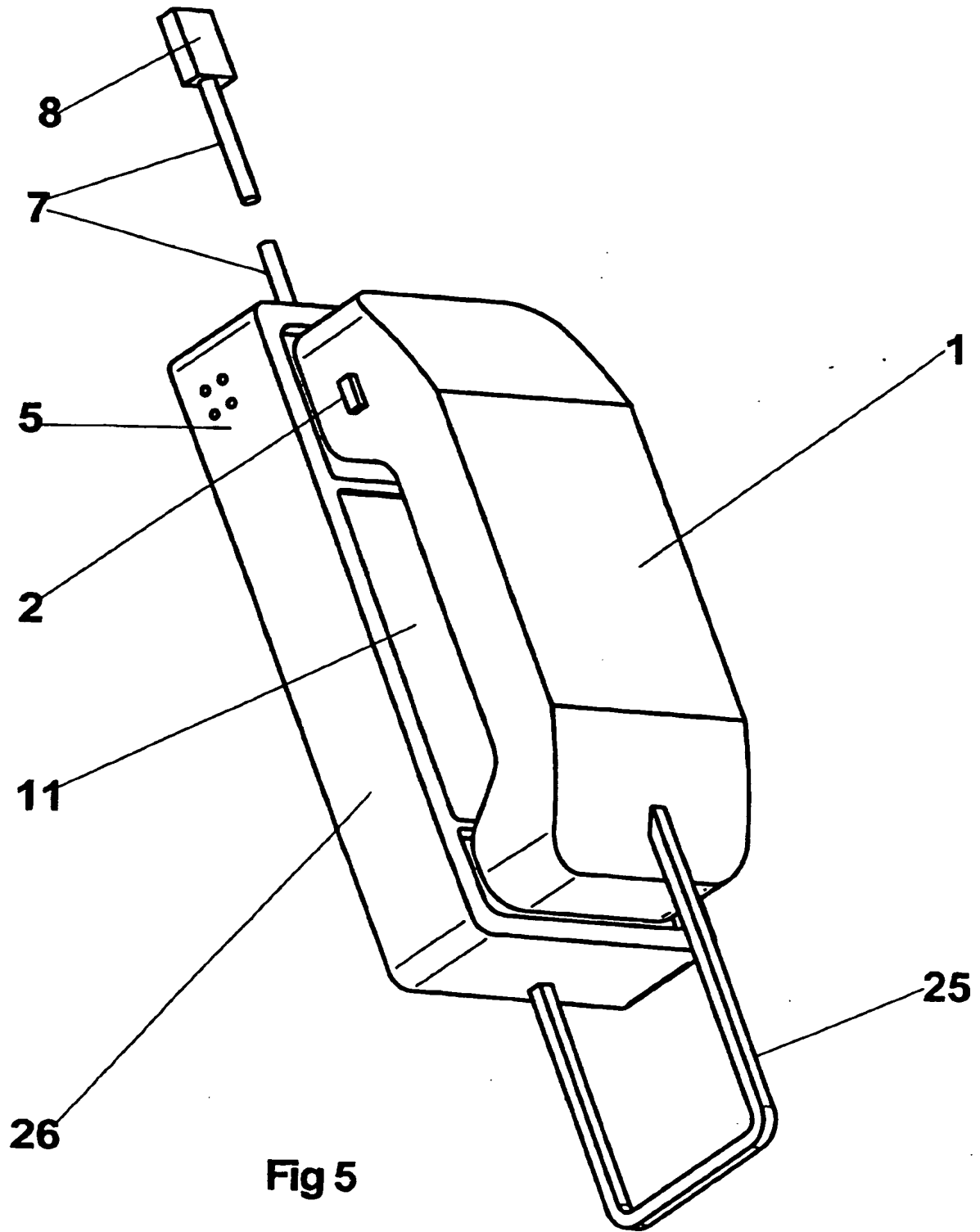


Fig 5

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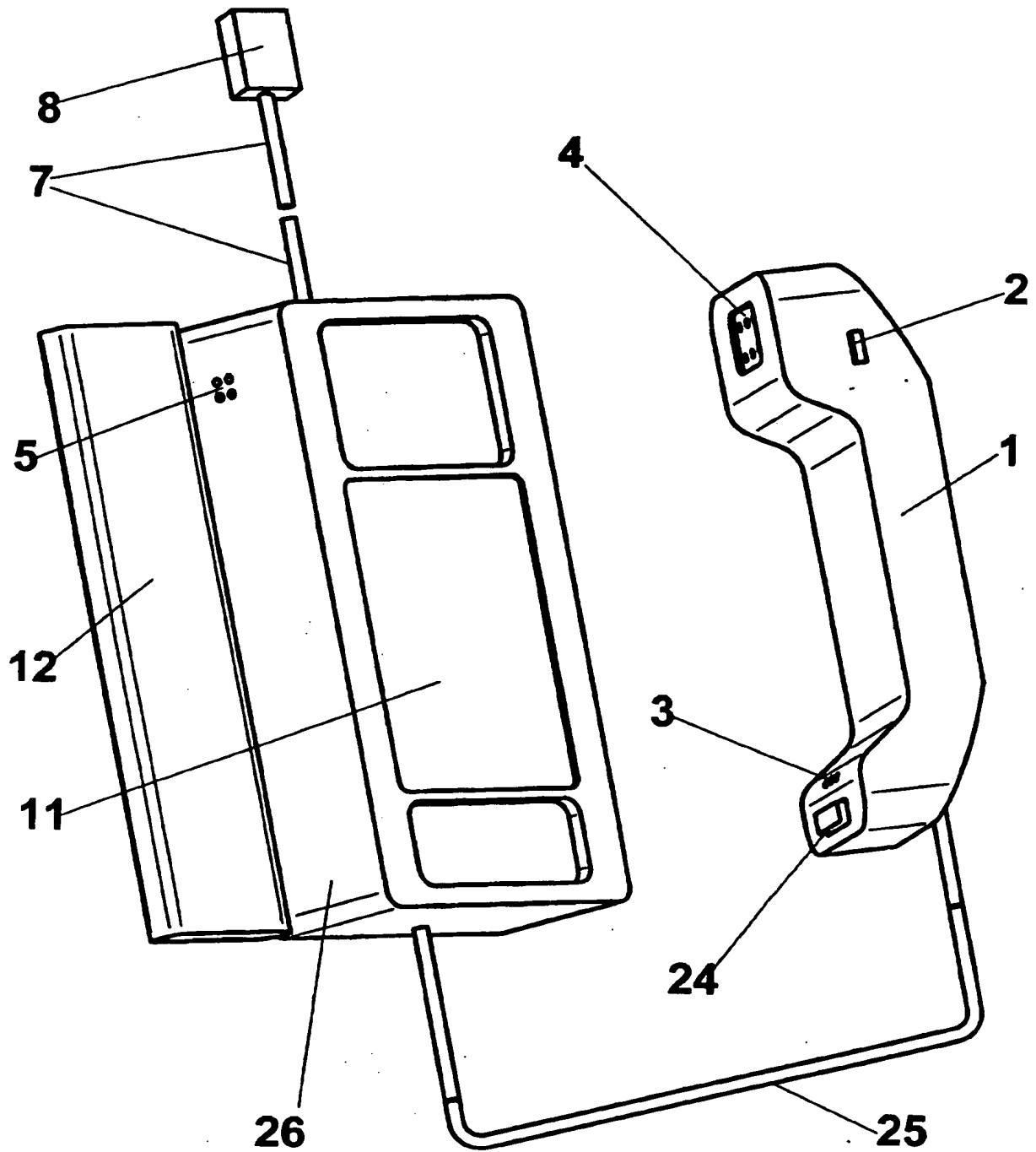


Fig 6

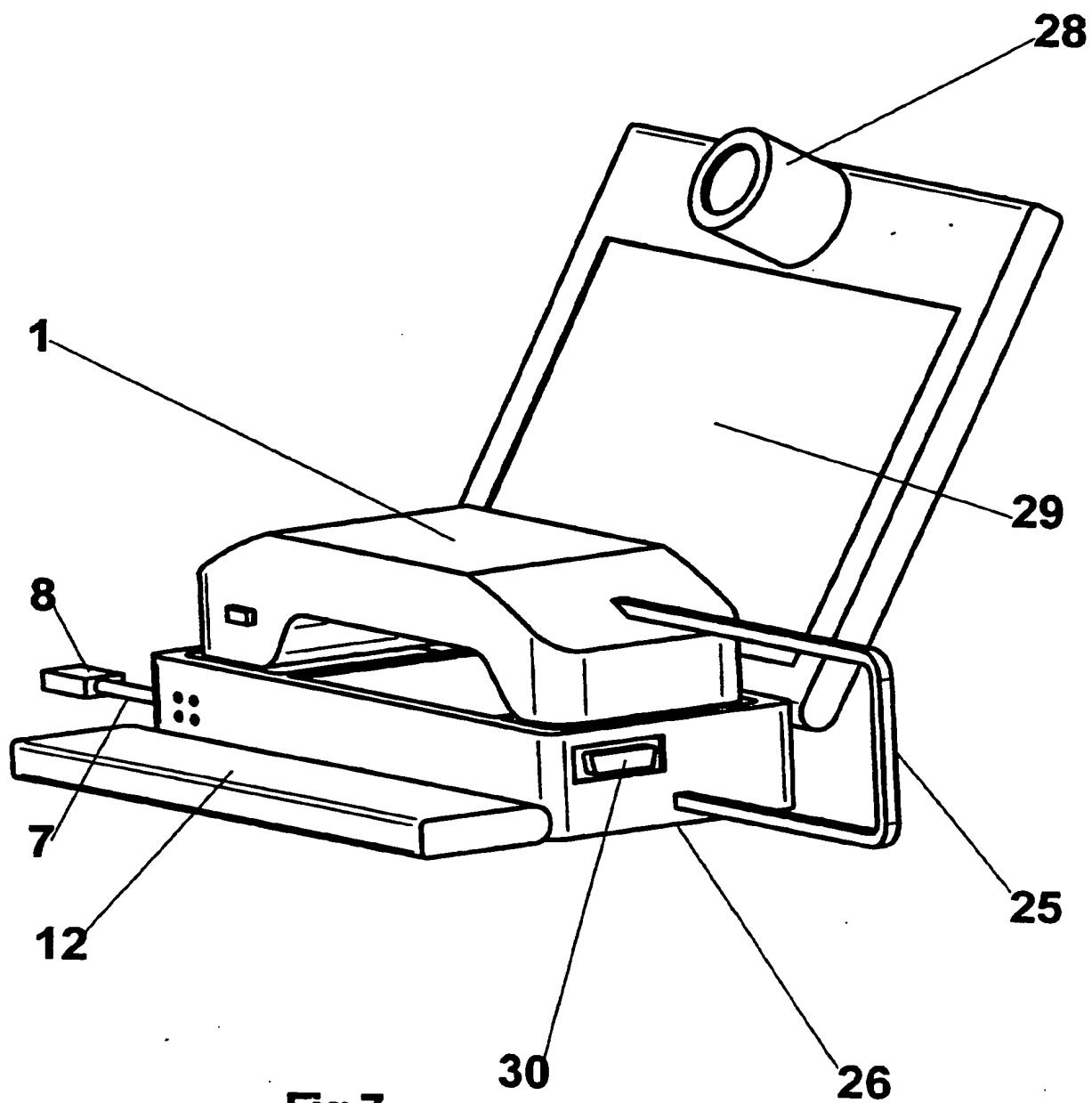


Fig 7

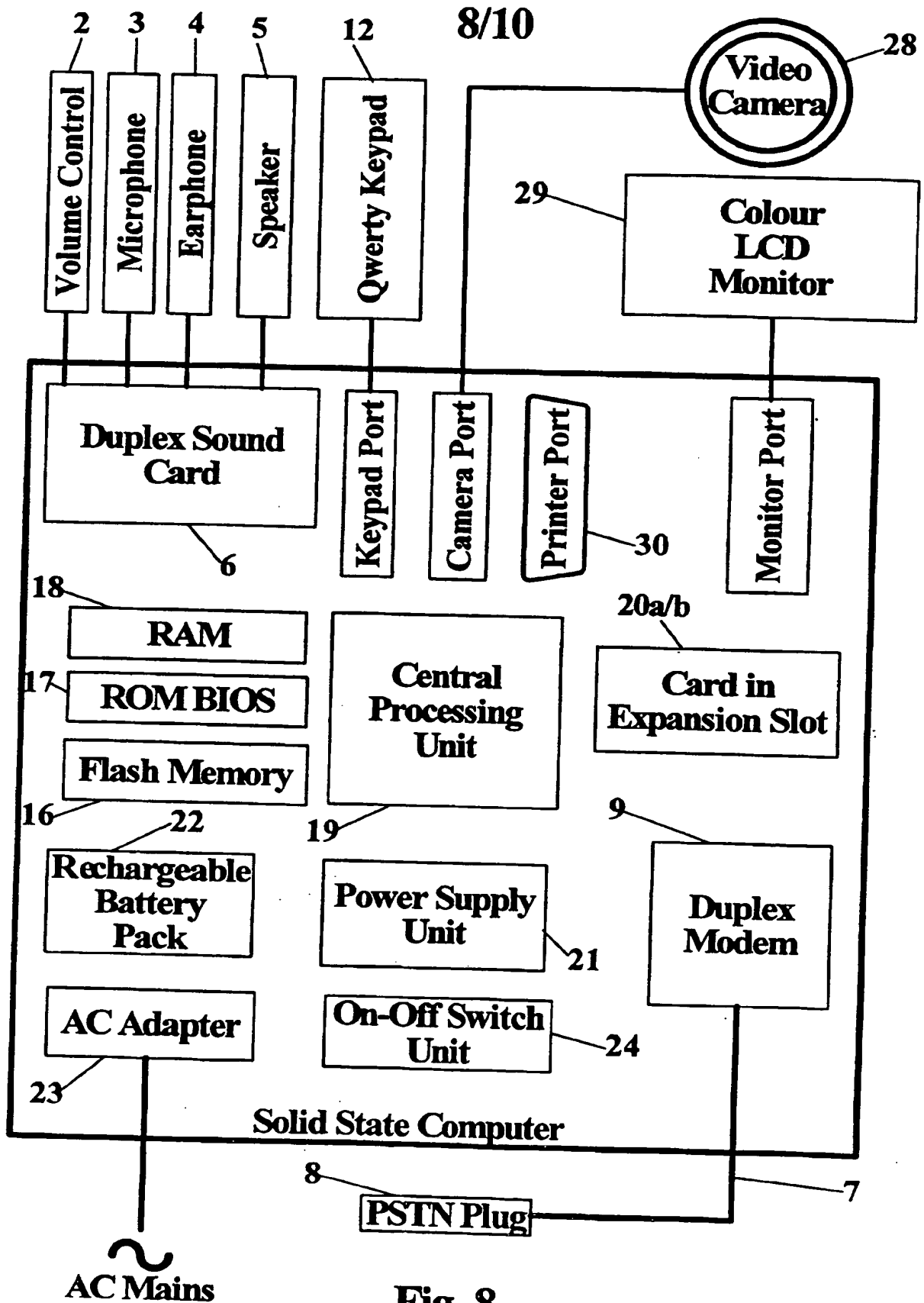


Fig. 8

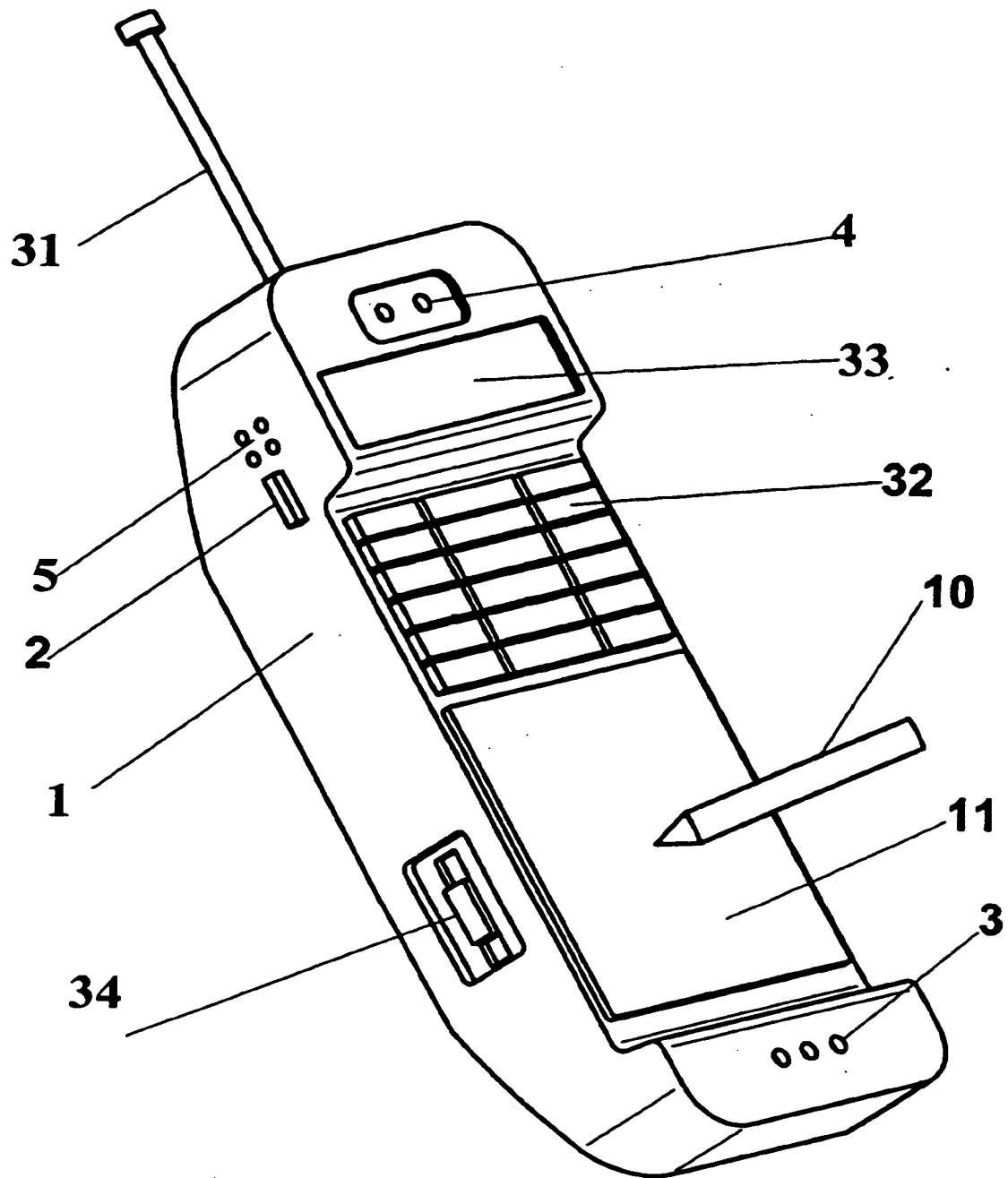


Fig 9

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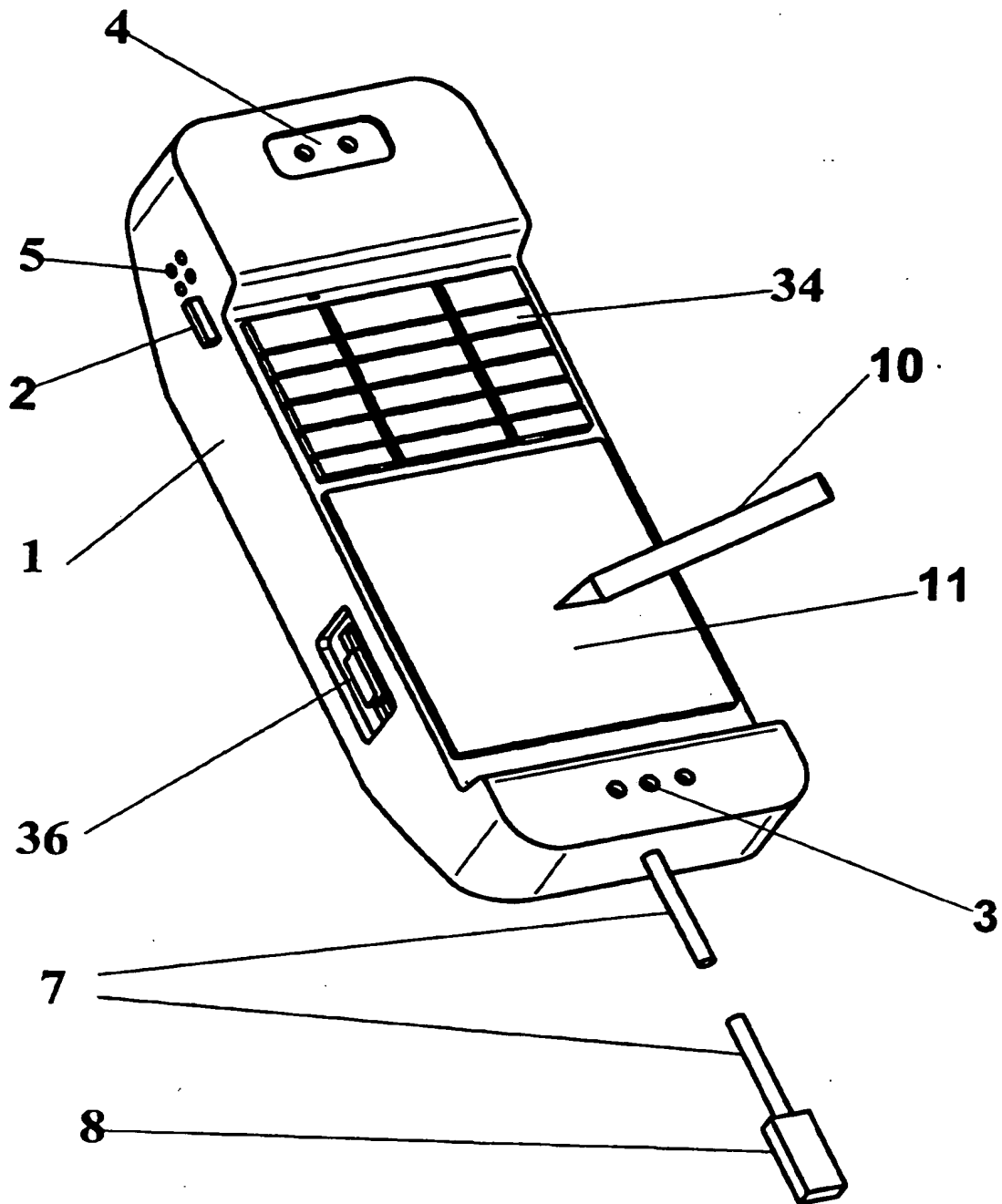


Fig 10

DEDICATED AUTOMATIC INTERNET TELEPHONE

FIELD: The present invention relates to a Dedicated Automatic Internet Telephone (DAIT) apparatus that can be instantly used even by Computer Illiterates for local call rate, long distance Voice and Multimedia Telecommunications across the Globe on the Internet with other Internet Voice and Multimedia Telecommunications users.

EXISTING STATE OF THE ART

LONG DISTANCE DEMAND: At present there is an ever increasing demand from people around the world wishing to have local call rate, long distance telephone conversations across the Globe with relatives, friends and business acquaintances. The present costs of conventional long distance and international phone calls is expensive and for many prohibitive compared to local telephone call rates.

INTERNET VOICE TELEPHONES: Recently, thanks to excellent Voice Phone Service software applications being offered (at low cost and even free on the Internet), a new mode of telephone communications has emerged enabling Internet users to "specially adapt their computers" to participate in telephone conversations (and Multimedia Telecommunications) on the Internet across the globe at local call rates which for some telephone users are free. Good quality full duplex audio and video communication is now obtainable due to recent improvements in standards of Internet telecommunication protocols, duplex voice compression, decompression, echo cancellation and broad band IP (Internet Phone) technology.

On-Line Proviso: In order to participate in Voice Telecommunications on the Internet with the existing state of the art, (as well as the DAIT apparatus of the present invention), it is necessary for both parties to be "On-Line" i.e. connected to the Internet, usually by pre-arranging a time, or by making a (lower cost few seconds only) conventional long distance telephone call to the other party with a mutually accepted request to go On-Line. Alternatively, where local and/or Internet calls are free some Internet Voice phone users may choose to stay On-Line 24 hours a day using a dedicated telephone line for the purpose.

PRIOR ART

VOICE & MULTIMEDIA SOFTWARE: Currently most Internet On-Line Voicephone Service Providers offer free downloading of their "user friendly" Internet Voice & Multimedia Application Software with "display menus" that make an Internet Phone call as easy as "Clicking a Mouse". After a reasonable trial period, satisfied clients may register for a modest one time fee - typically US \$30.

Present "User Friendly" Multimedia Application software and Menus include:-

- 10 a) list of "*Names / IP numbers most frequently dialled*",
- b) "*new IP Number entry box*",
- c) list of names of "*who is On-Line*", (inviting calls),
- d) name of who is making incoming call,
- e) accept or reject a call option,
- 15 f) telephone conference options,
- g) voice message options,
- h) Text Message, White Board Message, File Exchange options
- i) Video options,
- j) "Print Icons" options.

20

PRESENT SHORTCOMINGS - Computer Literacy Required

Unfortunately, at present due to numerous technical complications, these local call rate, Internet Voice phone calls are the limited preserve of Computer Literates.

Most telephone users are not capable of becoming Computer Literate, and others, for personal choice, wish to remain Computer Illiterate. The vast majority of telephone users today who are Computer illiterate and choose to remain so, would still desire local call rate, or free Global long distance Voice conversations if a product was available easy and simple enough to use, not requiring Computer and Internet training or education.

NO PRODUCT AVAILABLE:

At the time of filing, no Dedicated Automatic Internet Telephone Product is available for Computer Illiterates to buy, plug into a standard telephone socket, and instantly use for local call rate, Long distance Voice conversations across the Globe on the Internet.

- Technical Complications in Adapting Existing Prior Art:** At the moment even seasoned Computer Literates experience numerous technical complications trying to “adapt existing Personal computers” for local call rate, voice telecommunications on the Internet. These complications include:-
- a) search for, contact and obtain (on floppy disc or Compact Disc) an On-Line Internet Service Provider “Internet On-Line Application Software Package”,
 - b) install the Internet Application Software onto Personal Computer, follow all prompts and enter all information requested by Application Package,
 - 10 c) register with the Internet On-Line Service Provider - this involves on-screen form filling and disclosing such details as user’s, Address, Telephone No., Credit Card details, creating a “Security Pass Word”, transmitting all said information via the Internet to the Service provider, and obtaining acceptance of registration by Internet On-Line Service Provider,
 - 15 d) search Internet to find and select an “Internet Voice Telephone Service Provider”,
 - e) download Internet Voice Telephone Service Provider’s Application Software,
 - f) discover that one’s personal computer may lack essential components, such as Duplex Sound Card, adequate RAM, Duplex Modem, adequate microprocessor, suitable directional Microphone, Earphones, echo free speakers etc.,
 - 20 g) shop around and procure lacking essential components,
 - h) dismantle computer, install or replace lacking essential components, re-check performance, or procure a computer with adequate essential components,
 - i) download and experiment on a limited trial period with different Voicephone Service Providers application offers to find best,
 - 25 j) spend time calibrating settings - microphone volume, speaker volume, echo cancellation, etc., to adapt computer to obtain optimum Echo free Duplex reception,
 - k) register with On-Line Voicephone Service Provider - more on-screen form filling, entering user’s name, address, telephone No., credit card details, security pass word, and transmitting said information via the Internet to On-Line Voicephone Service
 - 30 Provider, and obtaining their acceptance of registration.

All complex time consuming effort before even seasoned Computer Literates are able to make successful Voice conversations on the Internet.

Not Automatic: However even after seasoned Computer Literates have gone through the above time consuming hassle and successfully made numerous Voice conversations on the Internet, the adapted computer is by no means automatic, or instant.

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To make an Internet Voice phone call, at the present time one must:-

- a) switch on and, wait 3 minutes for "***booting up***", because of hard disc drive delays,
- b) then mouse-click an icon to "***log-on***" the Internet Service provider,
- c) type out a user identity "***Security Code***",
- 10 d) wait for dialling up, to take effect,
- e) wait for checking ID number,
- f) click-off Service Provider's menu and then
- g) click icon for logging-on to Voice phone Service Providers' Application menu - up to 6 minutes wait before any calls can be made.

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Prior Art - "Tied Up Inconvenience": Furthermore, seasoned Computer users desiring many long distance Voice calls on the Net, using the same computer for other computer tasks, are also going to experience "***tied up***" hassle and inconvenience.

- 20 **PRIOR ART - SUPERFLUOUS COSTS** At present, even if one buys a computer with adequate essential components for adapting for Internet Phone calls, one is still paying over the top for superfluous hardware, such as hard discs, floppy disc drives, CD drives, plus other superfluous software thrown in, not essential if the computer is to be used exclusively for Internet Phone calls.

25

ADVANTAGES FOR ALL With all the above hassle in the present state of the art, even seasoned Computer Literates would benefit from the availability of DAITs.

- As for Computer Illiterates, DAITs will open up a new activity in their lives, the ability to have affordable longer, more frequent Global Phone conversations and a simpler,
- 30 easier, user friendly access to the ever increasing opportunities of the Internet. This is because some of the present Voice Application Software Packages available provide for easy, user friendly, simple access to web pages on the Internet at no extra cost.

INVENTIVE STEP / OBJECT

The inventive step of the present invention is to overcome the above shortcomings and non availability in the present state of the art, by providing an affordable Dedicated Automatic Internet Telephone product that Seasoned Computer Literates as well as
 5 Computer Illiterates can buy, plug into a telephone socket, instantly operate and enjoy local call rate, (or free) Global Internet Phone conversations.

Affordable because of less hardware and software essential for operation and the economies of scale from demand in hundreds of millions.

10

NO ANTICIPATIONS - RE-EMPHASIS

To re-emphasise the inventive step of the present invention, that no anticipations exist, (at time of first filing patent) if one presently sought after a DAIT from telecommunications or computer vendors insisting, "I am Computer Illiterate and wish
 15 to remain so, can I purchase now a Dedicated Automatic Internet Telephone that I can plug into a telephone socket and instantly use for Local Call Rate, Internet Voice Phone conversations with other Internet voice phone communication users". The present answer - (before date of 1st filing) is, "Sorry! No such product exists".

A search on the Derwent WPAT database produced no anticipations.

20

Definitions in this citation:

Solid State Computer: A Computer that does not embody any electromechanical moving parts, such as in Hard Disc Drives, Floppy Disc Drives, or Compact Disc Drives, all of which take a significant amount time to down load and/or boot up which is
 25 unsuitable for DAITs. Solid State Computers embody Flash memories comprising small Integrated Microchips to instantly perform booting up and down loading tasks.

Automatic - is meant that when apparatus is switched on, Solid State Computer is Pre-configured for Instant self booting-up, self-dialling up Internet Service Provider, self-providing of security code response, to log-on to Internet, followed by self-logging-on to
 30 Voice Telephone Service Provider Application Menu, ready to make or receive Internet telephone calls, and/or Multimedia Communications.

- Summary of the Invention:** - DAIT - a Dedicated Automatic Internet Telephone apparatus, for use even by Computer Illiterates for Local Call Rate (or free) Global
- 5 Internet Phone Communications, comprising a telephone handset enclosure embodying earphone, microphone, duplex sound card, key pad, LCD monitor, and solid state computer provided with duplex modem and standard telephone connecting plug, said computer pre-loaded / configured for automatic instant booting up, and logging-on ready to make or receive Internet Voicephone calls, and Multimedia Communications.
- 10 Enhanced embodiments include video camera, LCD colour video monitor, combined DAIT / land line phone, and combined DAIT / mobile phone.

- Mode of Operation:** Typically when user picks up or switches on handset of DAIT, automatic self-booting up and logging-on takes effect, and the LCD monitor displays a
- 15 Voice Telephone Service Provider Application Menu, showing that apparatus is ready to instantly make or receive Internet telephone calls, and/or Multimedia Communications as can be done with present day Internet Voice Phones - a call is made by twice clicking a displayed name with a touch pen or finger, or tapping out a new number on key pad.
- 20 **Prepaid On-Line Licence Fees:** As with mobile telephones, DAITs Dedicated Automatic Internet Telephones will be available for sale with Voice and Internet On-Line Service Provider Licence fees prepaid for limited periods and/or indefinite periods. The pre-registration, pre-configuring, and pre-loading of DAITs for security and convenience would be carried out by the vendor before taking delivery by the purchaser.
- 25 After buying a DAIT, one simply plugs it into a telephone socket for instant use. In the case of combined DAIT / Mobile Phones, the options switch is used to select from "Off", "DAIT", or "Mobile".

REFERENCE TO DRAWINGS:

FIG. 1 is an external 3-D illustration of a typical first embodiment of the invention - DAIT provided with integral colour LCD Monitor within the handset enclosure.

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FIG. 2a & 2b are respectively internal front and back 3-D Views - i.e. inside the integral handset enclosure of the same first embodiment of a DAIT -.

FIG. 3 is a block schematic diagram of the same first embodiment of a DAIT.

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FIG. 4 illustrates a second embodiment of a DAIT showing handset containing at least microphone / earphone with a separate base unit containing balance of components including colour LCD Monitor. The handset is shown off the base unit - apparatus automatically switched on by docking switch.

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FIG. 5 illustrates the same second embodiment as Fig. 4., but with handset shown docked on base unit - apparatus automatically switched off by docking switch.

FIG. 6 is similar to Fig. 5 but includes a real keypad hinged off the base unit.

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FIG. 7 illustrates a typical third embodiment of a DAIT - handset, a separate base unit, incorporating a hinged separate larger colour LCD Monitor embodying a Video Camera, above and also the fourth embodiment - provision of a Printer Port,.

FIG. 8 is a block schematic diagram of the third and fourth embodiment of the invention.

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FIG. 9 illustrates a typical fifth embodiment of the invention - Combined DAIT and Mobile telephone in one integral hand set enclosure.

FIG. 10 illustrates a typical sixth embodiment of the invention - Combined illustrates and Land line telephone in one integral hand set enclosure.

30

DESCRIPTION

1. Referring to Figures 1, 2a, 2b & 3, illustrating a typical first embodiment of the present invention there is provided a Dedicated Automatic Internet Telephone apparatus for instant use even by Computer Illiterates for Long Distance Voice and Multimedia Telecommunications across the Globe on the Internet with other Internet Voice and Multimedia Telecommunications users, comprising a telephone handset enclosure 1, containing:-

10 computer peripherals :-

volume control, 2, microphone, 3, earphone, 4, and at least one speaker, 5,

duplex sound card, 6, with connection means to said volume control, 2, microphone, 3, earphone, 4, and speaker, 5,

15 duplex modem means, 9, telephone connector cable, 7, and telephone plug means, 8, for connection to a land line (Public Service Telephone Network, (PSTN) and/or Integrated Services Digital Network (ISDN) and/or Fibre Optics Cable Network, and/or Dedicated Direct Internet Network), connection socket, and/or Mobile Telephone Network (via Mobile Telephone apparatus Data connection socket),

20 Touch screen pen, 10, facia mounted and/or hinge mounted LCD Touch screen interface monitor, 11, including optional screen displayed Touch interface Key Pad, and/or facia mounted and/or hinged real key Pad, and

Solid State Computer typically embodying:-

25 Motherboard 15, Solid state Flash Memory, 16, ROM BIOS, 17, RAM, 18, CPU, 19, expansion slots, 20a, cards, 20b, Power Supply Unit 21, Rechargeable battery pack, 22, AC adapter 23, on-off / docking switch means, 24, and circuitry means for interconnection with all said components.

Said Solid State Computer preloaded with
 an Operating System (typically Windows CE, 95, or 98),
 prepaid/licensed/registered On-Line Internet Service Provider Application
 5 Software/protocols,
 prepaid/licensed/registered On-Line Internet Voice and Multimedia
 Telecommunications Service Provider Application Software/protocols, including duplex
 voice compression / decompression software, echo cancellation software means said
 computer pre-configured for instant:-
 10 self-booting up of computer,
 self dialling -up Internet On-Line Service Provider, including self entering of
 security code in response to request for same for logging-on to Internet On-Line Service
 Provider,
 self instant logging-on to Internet On-Line Voice and Multimedia
 15 Telecommunications Service Provider, including entering security code, ready for voice
 and Multimedia Telecommunications on the Internet as soon as the Computer on-off
 switching unit, 24, is turned on.

2 **Separate Base Unit Alternative:** Referring to Figures 4, 5, & 6, showing a
 20 typical second embodiment of the present invention the handset enclosure 1, contains at
 least said microphone 3, and said earphone 4, connected via
 a flexible multi-core cable, 25, to
 a separate base unit enclosure, 26, embodying for convenience all the remaining
 components / features cited in the first embodiment and optionally real key board or
 25 hinged keypad, 12 - (Figure 6).

3 **Video Enhancement:** Referring to Figures 7, & 8, showing a typical third
 embodiment of the present invention the Dedicated Automatic Internet Telephone
 apparatus is additionally provided with a video camera, 28, separate larger Colour LCD
 30 video monitor, 29, and optional mouse means, all interfaced with said Solid State
 Computer, with said pre-loaded Application software embodying means to enable voice,
 video and Multimedia Telecommunications on Internet.

4 **Printer Port:** Figures 7, & 8, show a fourth embodiment or enhancement of the
present invention, - DAIT provided with compatible printer driver software means and
standard computer printer port, 30, for connection to a separate external printer for print-
5 outs of Internet Multimedia Text, White board documents and Files.

5 **Combination DAIT / Mobile Telephone:** Referring to Figure 9, showing a
typical fifth embodiment of the present invention, comprising handset enclosure, 1,
embodying combination DAIT and mobile telephone apparatus Software and Hardware,
10 including mobile aerial, 31, mobile keypad, 32, and mobile LCD display, 33; said duplex
modem, 9, pre-connected to said mobile telephone fax machine data connection socket;
said Combination apparatus provided with a switching unit 34, giving options of "OFF",
"MOBILE", and "DAIT".

15 6. **Combination DAIT / Land Line Telephone:** Referring to Figure 10, showing a
typical sixth embodiment of the present invention, the Dedicated Automatic Internet
Telephone apparatus additionally embodies standard Land Line telephone apparatus
Hardware and Software means, including keypad, 35, with connection, 7, to said duplex
modem, 9, pre-connected to Land Line telephone connection plug, 8, said Combination
20 DAIT / Land Line Telephone apparatus provided with a switching unit 36, giving
options of "OFF", "PHONE", or "DAIT".

CLAIMS:

1. A Dedicated Automatic Internet Telephone apparatus for Instant use even by
 5 Computer Illiterates for Long Distance Voice and Multimedia Telecommunications
 across the Globe on the Internet, comprising a telephone handset enclosure containing
 peripherals including:-
 - A) volume control, microphone, earphone and speaker means,
 - 10 B) duplex sound card with connection means to said volume control, microphone,
 earphone, and speaker means,
 - C) duplex modem means, telephone connector cable, and telephone plug means, for
 connection to a land line (Public Service Telephone Network, and/or Integrated
 Services Digital Network and/or Fibre Optics Cable Network, and/or Dedicated
 15 Direct Internet Network), connection socket, and/or Mobile Telephone Network (via
 Mobile Telephone apparatus Data connection socket),
 - D) touch screen pen, facia mounted and/or hinge mounted LCD Touch screen interface
 monitor, including optional screen displayed Touch interface Key Pad, and/or facia
 mounted and/or hinged real key Pad, or keyboard, and
- solid state computer means typically embodying:- Motherboard, Flash memory, ROM,
 20 RAM, Central Processing Unit, Expansion slots, Cards, Power Supply Unit,
 Rechargeable battery pack, AC adapter, on-off switch and/or docking switch means, and
 circuitry means for interconnection with all said components, said solid state computer
 means preloaded with:-
 - a) an Operating System (typically Windows CE, 95, or 98),
 - 25 b) a prepaid/licensed/registered On-Line Internet Service Provider Application
 Software/protocols,
 - c) a prepaid/licensed/registered On-Line Internet Voice and Multimedia
 Telecommunications Service Provider Application Software/protocols, including
 duplex voice compression / decompression software, and echo cancellation software
 30 means configured for instant:-
 - I. self-booting up of computer,

II. self dialling-up, Internet On-Line Service Provider, including self-entering security code in response to request for same for logging-on to Internet On-Line Service Provider,

5 III. self-logging-on to Internet On-Line Voice and Multimedia Telecommunications Service Provider, including self-entering security code, ready for voice and Multimedia Telecommunications on the Internet as soon as said Computer on-off switching unit is turned on.

2. A Dedicated Automatic Internet Telephone apparatus as in claim 1. wherein said
10 handset enclosure contains at least said earphone and said microphone, connected via a flexible multi-core cable, to a separate base unit enclosure, embodying for convenience the remaining components and features cited in claim 1.

3. A Dedicated Automatic Internet Telephone apparatus as in claim 2. wherein said
15 separate base unit is provided with video communication means comprising video camera means, video monitor means and optional mouse means, all interfaced with said solid state computer means, with said pre-loaded Application software embodying means to enable voice, video and Multimedia Telecommunications on Internet.

20 4. A Dedicated Automatic Internet Telephone apparatus as in claim 3. wherein said DAIT computer means is provided with compatible printer driver software means and standard computer printer port, for connection to a separate external printer for print-outs of Internet Multimedia Text, White board documents and Files.

25 5. A Dedicated Automatic Internet Telephone apparatus as in claim 1. embodying combination DAIT and mobile telephone apparatus Software and Hardware, including mobile aerial, mobile keypad, and mobile LCD display, said duplex modem, pre-connected to said mobile telephone fax machine data connection socket; said Combination apparatus provided with a switching unit, giving options of "OFF",
30 "MOBILE", and "DAIT".

6. A Dedicated Automatic Internet Telephone apparatus as in claims 1. to 5. above wherein said apparatus additionally embodies standard Land Line telephone apparatus
- 5 Hardware and Software means, including keypad, with connection to said duplex modem, pre-connected to Land Line telephone connection plug, said Combination DAIT / Land Line Telephone apparatus provided with a switching unit giving options of "OFF", "PHONE", or "DAIT".



Application No: GB 9813849.8
Claims searched: All

Examiner: Al Strayton
Date of search: 3 December 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): H4K: KBHX; KF42; KOA; KOD4

Int Cl (Ed.6): H04M

Other: ONLINE: WPI

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|--|--------------------|
| A | GB 2 309 615 A (FIRECREST) See esp. Fig.6 | |
| A | WO 98/37665 A1 (FONEFRIEND) See esp. Fig.1 | |
| A | WO 98/05145 A1 (WEINGARTEN) | |

| | | | |
|---|---|---|--|
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